Worksheet: Electricity

1. How is the resistivity of alloys compared with those of pure metals from which they may have been formed?
2. On what factors does the resistance of a conductor depend?
3. An electric iron of resistance 20 Ω takes a current of 5 A. Calculate the heat developed in 30 s.
4. Define the unit of current.
5. What are the advantages of connecting electrical devices in parallel with the battery instead of connecting them in series?
6. How much energy is given to each coulomb of charge passing through a 6 V battery?
7. Will current flow more easily through a thick wire or a thin wire of the same material, when connected to the same source? Why?
8. Why are metals good conductors of electricity whereas glass is a bad conductor of electricity ? Give reason.
9. List the factors on which the resistance of a conductor in the shape of a wire depends.
10. What is meant by saying that the potential difference between two points is 1 V?
11. Compute the heat generated while transferring 96000 coulomb of charge in one hour through a potential difference of 50 V
12. What determines the rate at which energy is delivered by a current?
13. Why are alloys commonly used in electrical heating devices ?
14. Let the resistance of an electrical component remains constant while the potential difference across the two ends of the component decreases to half of its former value. What change will occur in the current through it?
15. A current of 1 A is drawn by a filament of an electric bulb. Number of electrons passing through a cross section of the filament in 16 seconds would be roughly.
16. What does an electric circuit mean?
17. Why are coils of electric toasters and electric irons made of an alloy rather than a pure metal?
18. Calculate the resistivity of the material of a wire of length 1 m, radius 0.01 cm and resistance 20 ohms.

19. Name a device that you can use to maintain a potential difference between the ends of a conductor. Explain the process by which this device does so.

20. What is the maximum resistance which can be made using five resistors each of 1/5 Ω ?